

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:)	
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<u>Scott E. Hall</u>)	
)	
Serial No.: 10/539,700)	Group Art Unit: 3723
)	
Filed: June 16, 2005)	Examiner: Randall E. Chin
)	
For: System for Removably Joining an)	Board of Patent Appeals and
Appliance which Includes a Driving)	Interferences
Member to a Driven Member with a)	
Workpiece)	
)	
Confirmation No.: 6576)	

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

In support of the Notice of Appeal filed on July 29, 2010 and pursuant to 37 C.F.R. § 41.37, Appellant presents this appeal brief in the above-captioned application.

This is an appeal to the Board of Patent Appeals and Interferences from the Examiner's final rejection of claims 1-16 in the Final Office Action dated May 27, 2010. The appealed claims are set forth in the attached Claims Appendix.

1. Real Party in Interest

This application is assigned to Koninklijke Philips Electronics N.V., the real party in interest.

2. Related Appeals and Interferences

There are no other appeals or interferences that would directly affect, be directly affected, or have a bearing on the instant appeal.

3. Status of the Claims

Claims 1-16 are presently pending. Claims 1-16 have been rejected in the Final Office Action. The final rejection of claims 1-16 is being appealed.

4. Status of Amendments

All amendments submitted by Appellant have been entered.

5. Summary of Claimed Subject Matter

The present invention, as recited in independent claim 1, is directed to a system for joining an appliance body (12) having a driving assembly (13) therein to a driven member assembly (15) which includes a workpiece element (26) having a torsional axis of movement. (*See Specification*, p. 2, ll. 15-30, p. 3, ll. 21-31, Fig. 1). The system includes a plurality of joining assemblies (37, 38, 39) removably attaching the driven member assembly (15) to the appliance body (12). (*Id.* at p. 4, ll. 23-36, Fig. 1). The joining assemblies (37, 38, 39) are each separate from the torsional axis of the workpiece element (26). (*Id.* at p. 6, ll. 28-38, Figs. 1-3). The joining assemblies (37, 38, 39) each include a mating member (43) on one of a) the appliance body (12) and b) the driven member assembly (15) and an associated receiving element (46) on the other thereof. (*Id.* at p. 4, ll. 23-36, Fig. 1). The mating members (43) and the receiving elements (46) have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element (26) during operation of the appliance and such that the driven member assembly (15) is readily removable from the appliance body (12)

upon application of an axial force. (*Id.* at p. 5, l. 28 – p. 6, l. 4). The mating of the mating members (43) and the receiving members (46) is an interference fit. (*Id.* at p. 4, l. 37 – p. 5, l. 7).

The present invention, as recited in independent claim 10, is directed to an oral care appliance. (10) (*See Specification*, p. 2, ll. 15-30, p. 3, ll. 21-31, Fig. 1). The oral care appliance (10) includes an appliance body (12) having a driving assembly (13) therein. (*Id.*). The oral care appliance (10) also includes a driven member assembly (15) which includes a workpiece element (26) having a torsional axis of movement and wherein the workpiece element (26) includes a brushhead (30). (*Id.*). The oral care appliance (10) also includes a coupling structure for joining the appliance body (12) to the driven member assembly (15). (*Id.* at p. 4, ll. 23-36, Fig. 1). The coupling structure includes a plurality of joining assemblies (37, 38, 39) removably attaching the driven member assembly (15) to the appliance body (12). (*Id.*). The joining assemblies (37, 38, 39) are each separate from the torsional axis of the workpiece element (26). (*Id.* at p. 6, ll. 28-38, Figs. 1-3). Each joining assembly (37, 38, 39) includes a mating member (43) from one of a) the appliance body (12) or b) the driven member assembly (15) and an associated receiving element (46) in the other, thereof, receiving the mating member (43). (*Id.* at p. 4, ll. 23-36, Fig. 1). The mating members (43) and the receiving elements (46) have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element (26) during operation of the appliance, and such that the driven member assembly (15) is readily removable from the appliance body (12) upon application of an axial force. (*Id.* at p. 5, l. 28 – p. 6, l. 4). The mating of the mating members (43) and the receiving elements (46) is an interference fit. (*Id.* at p. 4, l. 37 – p. 5, l. 7).

The present invention, as recited in independent claim 15, is directed to a brushhead-handle assembly of a power toothbrush in which a brushhead is joinable to and removable from a handle portion of the toothbrush by a plurality of joining assemblies. (*See Specification*, p. 2, ll. 15-30, p. 3, ll. 21-31, Fig. 1). The joining assemblies are separate from a torsional axis of movement of a brushhead workpiece portion of the

brushhead assembly. (*Id.*). The brushhead-handle assembly includes a brushhead assembly which includes a brushhead workpiece element. (*Id.*). The brushhead assembly includes a plurality of joining members which mate with associated second joining members in the handle portion to form joining assemblies. (*Id.* at p. 4, ll. 23-36, Fig. 1). The first joining members have such a configuration, relative to the configuration of the associated second joining members and mate therewith in such a manner that there is substantially no lost motion of the workpiece element during operation of the toothbrush and such that the brushhead assembly is readily removable from the handle portion of the toothbrush upon application of an axial force. (*Id.* at p. 5, l. 28 – p. 6, l. 4). The mating of the joining members and the second joining members is an interference fit. (*Id.* at p. 4, l. 37 – p. 5, l. 7).

6. Grounds of Rejection to be Reviewed on Appeal

- I. Whether claims 1-9 are unpatentable under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,777,393 to Peot.
- II. Whether claims 10-16 are unpatentable under 35 U.S.C. § 102(b) as being obvious over U.S. Patent No. 5,617,601 to McDougall.

7. Argument

- I. The Rejection of Claims 1-7, 9, 12, 14, and 16-20 are Unpatentable Under 35 U.S.C. § 102(b) as Being Anticipated by U.S. Patent No. 7,518,054 to McKinney et al Should be Reversed.

A. The Examiner's Rejection

In the Final Office Action, the Examiner rejected claims 1-9 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,777,393 to Peot. (*See 5/27/10 Office Action*, pp. 2-5).

The Examiner contends that “the driven member assembly” and “the appliance body” are not positively recited in claim 1 and that no significant patentable

weight is attributed to the claimed “driving assembly,” “driven member assembly,” “appliance body,” and “workpiece element.” (*See 5/27/10 Office Action*, p. 2).

Peot discloses a motor unit 10 attachable to a housing 132 by means of locking pin members 58. Peot discloses a spring actuated locking plate inside of housing 12 of motor unit 10, wherein the locking plate engages “the grooves provided in locking pin members 58.” (*See Peot*, col. 7, ll. 41-47). The Examiner refers to the locking pin members and their corresponding holes in the motor housing to meet the claimed mating members and receiving members, respectively. (*See 5/27/10 Office Action*, p. 3). The Examiner asserts that the coupling disclosed by Peot is essentially an interference fit because “there is still physical holding friction/contact between the mating members and the receiving members.” (*Id.*).

- B. The Peot Reference Does Not Disclose or Suggest the Driven Member Assembly is Readily Removable from the Appliance Body upon Application of an Axial Force, and Wherein the Mating of the Mating Members and the Receiving Members is an Interference Fit, as Recited in Claim 1.

Claim 1 recites “[a] system for joining an appliance body having a driving assembly therein to a driven member assembly which includes a workpiece element having a torsional axis of movement, comprising: a plurality of joining assemblies removably attaching the driven member assembly to the appliance body, wherein the joining assemblies are each separate from the torsional axis of the workpiece element, wherein the joining assemblies each include a mating member on one of a) the appliance body and b) the driven member assembly and an associated receiving element on the other thereof, wherein the mating members and the receiving elements have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element during operation of the appliance and such that *the driven member assembly is readily removable from the appliance body upon application of an axial force, and wherein the mating of the mating members and the receiving members is an interference fit.*”

With regards to the Examiner's assertion that "the driven member assembly" and "the appliance body" are not positively recited in claim 1, Appellant respectfully submits that although these elements, as well as the other elements addressed by the Examiner, are not positively recited, they should still be given patentable weight because they are crucial to the structural relationship of the elements in claim 1. The "system for joining" in claim 1 requires the structural relationships recited in the claim. Thus, although these elements are indirectly recited, they should be given patentable weight because they describe the structure of the claimed invention. Furthermore, although "the driven member assembly" and "the appliance body" are not positively recited, the mating members and the receiving elements as well as the coupling of the mating members and the receiving elements is positively recited. Since these elements are part of "the driven member assembly" and "the appliance body," then the latter two elements are necessary to sufficiently explain the claimed structure. Thus, these elements should be given patentable weight.

With regards to Peot, Appellant maintains the arguments presented in the March 1, 2010 Response. An interference fit is defined as

"[a] fit in which two toleranced mating parts will always interfere when assembled because the "male" part is larger than the "female" part. The resulting difference in sizes, also called the allowance, means that force is required to assemble the part. An interference fit fixes or anchors the two parts as if they were one."¹

A further explanation of an interference fit is "a fastening between two components which is achieved by friction after the parts are pushed together, rather than by any other means of fastening."² One of ordinary skill in the art would understand that this type of configuration is required for an interference fit to exist. However, the Examiner maintains the argumentation previously presented with regards to Peot and states that the coupling disclosed by Peot is essentially an interference fit because "there is still physical holding friction/contact between the mating members and the receiving members." (See

¹ Definition of "interference fit." Fundamentals of Graphics Communications. 3rd Edition. McGraw Hill. http://highered.mcgraw-hill.com/sites/0072322098/student_view0/glossary_i.html

² Definition of "interference fit." Wikia Technology. http://engineering.wikia.com/wiki/Interference_fit

5/27/10 Office Action, p. 3). The Examiner also states that the elements recited in claim 1 do not have “patentable weight.” In addition to these contentions, the Examiner asserts “a mere joining system that provides an ‘interference fit’ between two members is not patentable.” (*Id.* at p. 10). Appellant respectfully disagrees. An interference fit between two elements is, in fact, patentable because it is a structural limitation. As previously explained, this type of mating is descriptive of the relative dimensions of the mating elements. One of skill in the art would understand that an interference fit is a specific structural recitation and Peot does not meet this recitation. The locking pin members (58) of Peot are not larger than the grooves in the locking plate so that they are coupled by friction. Accordingly, in view of the definitions of interference fit presented above, it is respectfully submitted that one of ordinary skill in the art would not interpret the locking plate engagement of the grooves in the locking pin members (58) of Peot to be an interference fit. Accordingly, Peot does not meet each and every recitation of claim 1 and therefore the rejection under 35 U.S.C. §102(b) should be withdrawn. It is also respectfully submitted that the rejections of dependent claims 2-9 should also be withdrawn.

II. The Rejection of Claims 10-16 are Unpatentable Under 35 U.S.C. § 102(b) as Being Anticipated by U.S. Patent No. 5,617,601 to McDougall Should be Reversed.

A. The Examiner's Rejection

In the Final Office Action, the Examiner rejected claims 10-16 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,617,601 to McDougall. (*See 5/27/10 Office Action*, pp. 5-10).

McDougall discloses a pair of lugs 513 located on plug part 509. The pair of plugs 513 are inserted into grooves 515 and subsequently twisted into internal grooves 517. In order to attach plug part 509 and brush part 508, McDougall discloses that “after brush part 508 has been push-fitted onto the casing part 506, it must then be rotated through a quarter turn to bring these into proper alignment. During this rotation, the lugs 513 move in internal grooves 517, engaging behind shoulder 519 so that the brush part

508 cannot be pulled off the casing part 506.” (See *McDougall*, col. 4, ll. 59-67). The Examiner refers to the lugs (513) and grooves (515) to meet the claimed mating members and receiving elements, respectively. (See 5/27/10 *Office Action*, p. 6).

- B. The McDougall Reference Does Not Disclose or Suggest the Driven Member Assembly is Readily Removable from the Appliance Body upon Application of an Axial Force, and Wherein the Mating of the Mating Members and the Receiving Members is an Interference Fit, as Recited in Claim 10.
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Claim 10 recites, “[a]n oral care appliance, comprising: an appliance body having a driving assembly therein; a driven member assembly which includes a workpiece element having a torsional axis of movement and wherein the workpiece element includes a brushhead; and a coupling structure for joining the appliance body to the driven member assembly, the coupling structure including a plurality of joining assemblies removably attaching the driven member assembly to the appliance body, wherein the joining assemblies are each separate from the torsional axis of the workpiece element, wherein each joining assembly includes a mating member from one of a) the appliance body or b) the driven member assembly and an associated receiving element in the other thereof, receiving said mating member, wherein the mating members and the receiving elements have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element during operation of the appliance, and such that *the driven member assembly is readily removable from the appliance body upon application of an axial force, and wherein the mating of the mating members and the receiving elements is an interference fit.*”

Appellant respectfully disagrees and directs the Examiner’s attentions to the definitions of an interference fit provided above. Rotating the brush part to move the lugs (513) into the grooves (515) is significantly different from *an interference fit*. The lugs (513) are not oversized with respect to grooves 517 or 515 so that friction holds them together. To overcome this deficiency, the Examiner asserts that McDougall

discloses a push fit and that a push fit is equivalent to the claimed “interference fit.” (*Id.* at p. 11). The Examiner also contends that claim 10 does not disclose that the mating of the mating members and the receiving elements is *solely* by an interference fit. (*Id.*). Appellant respectfully disagrees. Initially, Appellant notes that the push fit disclosed by McDougal is with respect to the assembly of the casing part (506) and the brush part (508). Specifically, McDougal discloses that the plug part (509) is push fit within the opening in the brush part (508). (*See McDougal*, col. 4, ll. 57-29). Appellant respectfully submits that if the push fit coupling of these two elements was an interference fit, it would be completely unnecessary to rotate the brush part to move the lugs (513) into the grooves (515).

With regards to the Examiner’s contention that Appellant does not recite the mating of the mating members and the receiving elements is *solely* by interference fit, Appellant respectfully submits that according to the language of claim 10, it would be improper to consider anything other than an interference fit because no other methods of coupling are suggested by the claim. Accordingly, it is respectfully submitted that McDougal also fails to disclose or suggest “*the mating of the mating members and the receiving elements is an interference fit*,” as recited in claim 10 and that claim 10 is allowable. Because claims 11-14 depend on and, therefore, contain all of the limitations of claim 10, it is respectfully submitted that these claims are also allowable.

Claim 15 also recites, “*the mating of the mating members and the receiving elements is an interference fit*.” Appellant, therefore, respectfully submits that claim 15 and its dependent claim 16 are also allowable over McDougall for at least the foregoing reasons presented with regard claim 10.

8. Conclusion

For the reasons set forth above, Appellant respectfully requests that the Board reverse the rejections of the claims by the Examiner under 35 U.S.C. § 102(b) and indicate that claims 1-16 are allowable.

Respectfully submitted,

Date: September 27, 2010

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CLAIMS APPENDIX

1. (Previously Presented) A system for joining an appliance body having a driving assembly therein to a driven member assembly which includes a workpiece element having a torsional axis of movement, comprising:

a plurality of joining assemblies removably attaching the driven member assembly to the appliance body, wherein the joining assemblies are each separate from the torsional axis of the workpiece element, wherein the joining assemblies each include a mating member on one of a) the appliance body and b) the driven member assembly and an associated receiving element on the other thereof, wherein the mating members and the receiving elements have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element during operation of the appliance and such that the driven member assembly is readily removable from the appliance body upon application of an axial force, and wherein the mating of the mating members and the receiving members is an interference fit.

2. (Original) A system of claim 1, wherein the configuration of the mating members and receiving elements is such that compression forces sufficient to maintain contact therebetween are always present during torque action of a drive shaft on which the workpiece is mounted.

3. (Previously Presented) A system of claim 1, including three spaced joining assemblies located around the periphery of the interface between the appliance body and the driven member assembly.

4. (Original) A system of claim 1, wherein the mating member of each joining assembly has a non-circular cross-section and the associated receiving element has a similar non-circular cross-section, such that the receiving element and the mating member are capable of mating together.

5. (Original) A system of claim 1, wherein the appliance body and the driven member assembly, respectively, include a handle portion and a head portion of an oral care appliance.
6. (Original) A system of claim 5, wherein the oral care appliance is a power toothbrush.
7. (Previously Presented) A system of claim 1, including registration elements on the appliance body which mate with the driven member assembly, the registration elements producing a proper orientation between the appliance body and the driven member assembly as the appliance body is joined to the driven member assembly.
8. (Original) A system of claim 1, wherein the mating member extends from the appliance body and the receiving element is in the driven member assembly.
9. (Original) A system of claim 1, wherein the mating members comprise spaced blade elements in the appliance body and the receiving elements comprise spring assemblies which clamp onto the blade elements with a compression force.
10. (Previously Presented) An oral care appliance, comprising:
 - an appliance body having a driving assembly therein;
 - a driven member assembly which includes a workpiece element having a torsional axis of movement and wherein the workpiece element includes a brushhead; and
 - a coupling structure for joining the appliance body to the driven member assembly, the coupling structure including a plurality of joining assemblies removably attaching the driven member assembly to the appliance body, wherein the joining assemblies are each separate from the torsional axis of the workpiece element, wherein each joining assembly includes a mating member from one of a) the appliance body or b) the driven member assembly and an associated receiving element in the other thereof, receiving said mating member, wherein the mating members and the receiving elements have such a configuration, respectively, and mate in such a manner that there is substantially no lost motion for the workpiece element during operation of the appliance,

and such that the driven member assembly is readily removable from the appliance body upon application of an axial force, and wherein the mating of the mating members and the receiving elements is an interference fit.

11. (Previously Presented) An appliance of claim 10, including three spaced joining assemblies arranged around the periphery of the interface between the appliance body and the driven member assembly.

12. (Original) An appliance of claim 10, wherein the mating member of each joining assembly has a non-circular cross-section and the associated receiving element has a similar non-circular cross-section, such that the receiving element and the mating member are capable of mating together.

13. (Original) An appliance of claim 10, wherein the mating member extends from the appliance body and the receiving element is in the driven member assembly.

14. (Original) An appliance of claim 10, wherein the mating members include spaced blade elements in the appliance body and the receiving elements comprise spring assemblies which clamp onto the blade elements with a compressive force.

15. (Previously Presented) A brushhead-handle assembly of a power toothbrush in which a brushhead is joinable to and removable from a handle portion of the toothbrush by a plurality of joining assemblies, the joining assemblies being separate from a torsional axis of movement of a brushhead workpiece portion of the brushhead assembly, comprising:

a brushhead assembly which includes a brushhead workpiece element, wherein the brushhead assembly includes a plurality of joining members which mate with associated second joining members in the handle portion to form joining assemblies, wherein the first joining members have such a configuration, relative to the configuration of the associated second joining members and mate therewith in such a manner that there is

substantially no lost motion of the workpiece element during operation of the toothbrush and such that the brushhead assembly is readily removable from the handle portion of the toothbrush upon application of an axial force, and wherein the mating of the joining members and the second joining members is an interference fit.

16. (Previously Presented) The brushhead-handle assembly of claim 15, wherein the configuration of the first joining member and the second joining members are such that compression forces sufficient to maintain contact therebetween are always present during torque action of a drive shaft on which the workpiece portion is mounted.

EVIDENCE APPENDIX

No evidence has been entered or relied upon in the present appeal.

RELATED PROCEEDING APPENDIX

No decisions have been rendered regarding the present appeal or any proceedings related thereto.